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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,402	07/01/2003	Yoshinori Shimizu	0020-5147P	9344
2292	7590	08/19/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			WILLIAMS, JOSEPH L	
			ART UNIT	PAPER NUMBER
			2879	
DATE MAILED: 08/19/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/609,402	Applicant(s) SHIMIZU ET AL.	
	Examiner Joseph L. Williams	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 08/902,725.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/29/05, 5/20/05</u> | 6) <input checked="" type="checkbox"/> Other: <u>IDS filed 6/15/05</u>                  |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 29 April 2005 has been entered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-8, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al. ("Full-Color Fluorescent Display Devices Using A Near-UV Light-Emitting Diode"), of record by Applicant.

Regarding claim 1, Sato teaches a light-emitting device comprising a light emitting component; and a phosphor capable of absorbing a part of light emitted by the light emitting component and emitting light of wavelength different from that of the absorbed light, wherein a straight line connecting a point of chromaticity corresponding

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to a peak of the spectrum generated by the light emitting component and a point of chromaticity corresponding to a peak of the spectrum generated by the phosphor is along with the black body radiation locus in the chromaticity diagram (see figure 4).

Regarding claim 2, Sato teaches the light emitting component is a blue LED (see column 1, 4<sup>th</sup> paragraph).

Regarding claim 3, Sato teaches the point of chromaticity corresponding to a peak of the spectrum generated by the light emitting component, the point of chromaticity corresponding to a peak of the spectrum generated by the phosphor and contents of the phosphor are adjusted so that the straight line is along with the black body radiation locus.

Regarding claim 5, Sato teaches the main emission peak of the light-emitting component is set within the ranges from 400nm to 530 nm (see column 1, 4<sup>th</sup> paragraph).

Regarding claim 6, Sato teaches the main emission peak of the light-emitting component is set within the ranges from 420nm to 490 nm (see column 1, 4<sup>th</sup> paragraph).

Regarding claim 7, Sato teaches the main emission peak of the light-emitting component is set within the ranges from 450nm to 475 nm (see column 1, 4<sup>th</sup> paragraph).

Regarding claim 8, Sato teaches the structure of the light emitting component is either one structure of homostructure, heterostrucuture and double-heterostructure which have MIS junction, PIN junction or PN junction.

Regarding claim 10, please note that the claimed method steps are product by process limitations. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Furthermore, it is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Regarding claim 11, Sato teaches the emission peak of the phosphor is set within the range from 530 nm to 570 nm.

3. Claims 1, 3, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by de Hair et al. (US 4,644,223), of record by Applicant.

Regarding claim 1, de Hair ('223) teaches in figure 1 a light-emitting device comprising a light emitting component; and a phosphor capable of absorbing a part of light emitted by the light emitting component and emitting light of wavelength different from that of the absorbed light, wherein a straight line connecting a point of chromaticity corresponding to a peak of the spectrum generated by the light emitting component and a point of chromaticity corresponding to a peak of the spectrum generated by the phosphor is along with the black body radiation locus in the chromaticity diagram.

Regarding claim 3, de Hair ('223) teaches the point of chromaticity corresponding to a peak of the spectrum generated by the light emitting component, the point of chromaticity corresponding to a peak of the spectrum generated by the phosphor and contents of the phosphor are adjusted so that the straight line is along with the black body radiation locus.

Regarding claim 4, de Hair ('223) teaches the color temperature can be 8080K or 4400K.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. ("Full-Color Fluorescent Display Devices Using A Near-UV Light-Emitting Diode"), of record by Applicant, in view of Chinone et al. (US 4,905,060).

Regarding claim 9, Sato discloses all of the claimed limitations except for the light-emitting component being an active layer having a single quantum well structure or multi quantum well structure.

Further regarding claim 9, Chinone ('060) teaches a light-emitting device with a multi quantum well light-emitting structure for the purpose of improving the efficiency of the light emitted and thus improve the brightness of the display.

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the quantum well of Chinone in the light emitting device of Sato for the purpose of improving the efficiency of the light emitted and thus improve the brightness of the display.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Williams whose telephone number is (571) 272-2465. The examiner can normally be reached on M-F (6:30 AM-3:00 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph L. Williams  
Primary Examiner  
Art Unit 2879